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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/517,911	12/14/2004	Rene Martinus Maria Derkx	NL 020516	6884

24737 7590 03/31/2006

PHILIPS INTELLECTUAL PROPERTY & STANDARDS

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BRIARCLIFF MANOR, NY 10510

EXAMINER

SINGH, RAMNANDAN P

ART UNIT

PAPER NUMBER

2614

DATE MAILED: 03/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/517,911

Applicant(s)

DERKX ET AL.

Examiner

Ramnandan Singh

Art Unit

2646

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 December 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>Sept. 06, 2005</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Preliminary Amendment

1. Preliminary amendment filed on Dec. 14, 2004 is approved.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Claim 2 recites the limitation "the non-linear echo canceller comprises a stationary echo estimator and/or a non-stationary echo estimator" in lines 2-3. Therefore, the stationary echo estimator and the non-stationary echo estimator must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New

Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or
REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.)
- (f) BACKGROUND OF THE INVENTION.
 - (1) Field of the Invention.
 - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a

nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

4. This application does not contain an abstract of the disclosure as required by 37 CFR 1.72(b). An abstract on a separate sheet is required.

Claim Objections

5. Claims 1, 2, 5, 8, 9 are objected to because of the following informalities:
Claim 1 recites the limitation, "a dedicated **non stationary** echo canceller" in line 2.
Replace the term "non stationary" with the term non-stationary". A similar thing holds for claims 2, 5, 8 and 9.

Appropriate correction is required.

Claim Rejections - 35 USC § 101

6. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.
7. Claim 9 is rejected under 35 U.S.C. 101 because the claimed invention claiming "signals" is directed to non-statutory subject matter. For this Office action, Examiner assumes this claim to an apparatus claim.

Claim Rejections - 35 USC § 112

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claim 8 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 8 recites the limitation " A method for canceling echoes in a communication network comprising one or more communication devices according to claim 7" in lines 1-3. Since claim 7 is an apparatus claim, it is unclear whether claim 8 is a method or an apparatus claim. For this Office action, Examiner assumes this claim to an apparatus claim.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. Claims 1-3, 5, 7-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Reesor et al [GB 2330745 A].

Regarding claim 1, Reesor et al teach an echo canceller, as shown in Fig. 1, the echo canceller comprises a dedicated non-stationary echo canceller (i.e. a new non-linear processor (NLP)) shown in Fig. 2 [Page 9, lines 1-8].

Regarding claim 2, Reesor et al further teach the echo canceller, wherein the non-linear echo canceller comprises a stationary echo estimator (i.e. noise estimator) [Fig. 2; page 9, line 23 to page 10, line 26] and/or a non-stationary echo estimator (i.e. echo tail estimator) [Fig. 2; page 13, line 7 to page 14, line 19].

Regarding claim 3, Reesor et al further teach the echo canceller, wherein the stationary echo estimator is a stationary noise estimator [Fig. 2; page 9, line 23 to page 10, line 26].

Regarding claim 5, Reesor et al further teach the echo canceller shown in Fig. 1, the echo canceller comprises an adaptive filter and a residual echo processor (i.e. NLP) coupled to the adaptive filter, which residual echo processor is equipped with the non stationary echo canceller (i.e. echo tail controller) [Fig. 2; page 9, lines 1-8; page 13, line 7 to page 14, line 19].

Regarding claim 7, Reesor et al further teach the echo canceller for communication device, such as for example a speakerphone or teleconferencing device, a telephone device, in particular a mobile telephone, a hands-free telephone or the like [page 1, lines 4-7; page 4, lines 3-7] , characterized in that the communication device comprises one echo canceller [Figs. 1-2]. Here Examiner assumes one echo canceller that meets the limitation "one or more echo cancellers" as claimed.

Regarding claim 8, Reesor et al further teach the echo canceller, wherein the non-stationary echoes are being cancelled by the NLP as post processing of the echo canceller shown in Fig. 1 [Figs. 1-2; page 13, line 13 to page 14, line 19].

Regarding claim 9, Reesor et al further teach the echo canceller, wherein the residual echo signals allow only non-stationary echoes to be cancelled by the NLP [Figs. 1-2; p. 1, line 25 to page 2, line 7; page 7, lines 16-21; page 9, lines 1-8].

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Reesor et al as applied to claim 3 above, and further in view of Martin [Signal Processing VII, EUSIPCO, pages 1182-1185, Edinburgh (Scotland, UK), Sept. 1994].

Regarding claim 4, although Reesor et al teach that the noise level can be estimated with any common, noise level detection algorithm [Page 10, lines 3-5], they do not teach expressly a specific algorithm to estimate stationary noise. So one of ordinary skill in the art would have been motivated to seek any known algorithm that estimates stationary noise, such as a Martin's algorithm

Martin teaches an algorithm based on spectral subtraction using minimum statistics to estimate a noise floor [Fig. 2; Section 2 through Section 4].

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the algorithm of Martin with Reesor et al in order to estimate a noise floor for both stationary and non-stationary noise without using a speech activity detector [Marin: Section 5 (conclusion), lines 1-3].

14. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Reesor et al as applied to claim 1 above, and further in view of Genter [US 5,293,784].

Regarding claim 6, Reesor et al do not teach expressly the echo canceller wherein the echo canceller comprises comfort noise inserting means.

Genter teaches an echo canceller (20) shown in Fig. 1, wherein non-linear residual echo suppressor (82) comprises comfort noise (i.e. artificial noise) inserting means [Figs. 1-2; col. 4, lines 16-26; col. 6, line 50 to col. 8, line 22].

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to combine the teachings of Genter with Reesor et al in order to inject comfort noise into the nonlinear suppressor so that the average level in spite of the

variation in operation of the non-linear processor which occurs with the presence or absence of a signal from the near-end speaker and the far-end speaker, respectively is maintained [Genter: col. 1, lines 24-30].

Conclusion

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Reesor et al [US 6,282,286 B1] teach a nonlinear processor for an acoustic echo canceller [Whole document].

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ramnandan Singh whose telephone number is (571) 272-7529. The examiner can normally be reached on M-TH (8:00-5:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Fan Tsang can be reached on (571) 272-7547. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ramnandan Singh
Examiner
Art Unit 2614

A handwritten signature in black ink, appearing to be 'RS' or 'R Singh', written in a cursive style.